

REMARKS/ARGUMENTS

Amendments to the claims have been made to comply with examiner concerns, to clarify aspects in the specification and claims, and to refine claim language. The amendments are believed to be consistent with the disclosure originally filed. Amendments are made for tangential issues of clarity and as a matter of the Office's convenience or expedience only. The amendments should not be interpreted as an action that in any way surrenders a particular equivalency, surrenders any right to patent coverage, or otherwise limits any rights that the Applicant may now or hereafter assert. It should be understood that, unless and to the extent deemed broadened by this amendment, and even as amended, the Applicant expressly reserves all rights, including but not limited to: all rights to maintain the scope of literal coverage with respect to any element as may have existed under the language previously presented, all rights to maintain the scope of equivalency coverage as may have existed under the language previously presented, and all rights to re-present the prior language at any time in this or any subsequent application. To the extent currently foreseeable, no change or reduction in direct or equivalency coverage is believed to exist, and no change or reduction in direct or equivalency coverage is intended through the presentation of this amendment. Presently, claims 1, 5, 6, 8-15 and 26-37 remain in the application.

Drawings Concerns

The action raised concerns with respect to the drawings. Applicant has attached to this response as Appendix A, six sheets of replacement drawings labeled "Replacement Sheets" believed to comply with the rules stated in 37 C.F.R. § 1.84. The replacement drawing sheets replace the original sheets including Figures 1-8. The applicant asserts that no new matter has been added by the replacement of the drawings. The amendments to the drawings are made to change drawings as requested by the Office in the May 5, 2004 office action, and to rectify obvious errors in the formal drawings.

The action expressed concerns to the clarity of an aperture outside of the area of significant gradient when compared to Figure 4. It is meant to be understood that outside includes, but is not limited to an outer side, part, surface or perhaps even exterior. An aperture (28) is shown in Figure 3 as being outside of the significant gradient (27). This aperture is not labeled in Figure 4.

Specification Amendments

Amendments to the specification are made to change the text as requested by the Office in the May 5, 2004 office action, and to correct typographical errors in the text. After review of the preliminary amendment filed on October 14, 2003, some changes made to the specification were not properly marked. Accordingly, the Applicant submits these previous changes in a marked-up version with this response. Further, the Office expressed concerns as to the clarity and support of “significant lubricant pressure gradient”. To clarify, the applicant has amended the specification to include, “a significant lubricant pressure gradient (27) having an important effect on the interior surface...”. The specification further states that a “... gradient can be sufficient to prevent or impede the migration of oil over a portion of the interior surface...”. This is a non-limiting example of a significant lubricant pressure gradient having an important effect.

Claim Objection

Claim 1 was amended to correct the informalities as indicated in the office action.

35 U.S.C. § 103

The action explicitly or tangentially indicates that numerous claims will become allowable once formalities are addressed. Accordingly, claim 1 is amended, without prejudice, to include the limitations of claims 2, 3 and 4 and is believed allowable.

The applicant believes further consideration of certain specific features is also appropriate. Accordingly, the applicant has amended the claims to permit focused attention on these features in this application. Importantly, it should be understood that the amendments made are done to permit focused consideration only. No acceptance of the prior concerns is made and the applicant expressly reserves the right to pursue unamended claims and otherwise pursue the original claim in this or a later application. No file wrapper estoppel should be presumed as these amendments are made only to permit focused attention on the issues raised in only this response.

The action expressed concern as to several claims under 35 U.S.C. §103(a). Of these, claims 26 and 37 merit particular attention (newly added independent claim 26 includes the scope of original claim 1, 13 and 15 and newly added independent claim 37 includes the scope of previously presented claim 1). Concerns as to these were based on either U.S. Pat. No. 5,186,129 (the Magnan et al. patent), in view of U.S. Pat. No. 5,027,762 (the Tokuyama et al. patent) or the Magnan patent in view of the Tokuyama patent, further in view of U.S. Pat. No. 4,463,566 (Guidoboni et al.).

As to claim 26 and its dependencies, these claims address the specific combination of the camshaft technology in a particularly unusual application, namely that of an aircraft engine. It should be understood, as the specification explains, that aircraft engines pose very different problems because in such applications, the lubricant can migrate in response to the orientation of the engine or the acceleration of the aircraft. As the specification also explains, the amount of lubricant collected in a particular location may vary significantly depending on the engine orientation (pitch, roll, or yaw) or the acceleration of the aircraft. As the specification discloses, this is compounded by the fact that aircraft routinely operate at attitudes (pitch, roll, yaw) which require the camshaft to operate for a duration of time out of the horizontal position (takeoff, landing, ascent, descent, turns, or so forth) making conventional camshaft lubrication technology not appropriate. The concern as to claim 26 acknowledged the aircraft feature, however, as to these it was proposed that it would have been obvious to have used an aircraft engine of the Guidoboni reference that applied the Magnan automobile device. The applicant respectfully

disagrees. In fact it was specifically not so obvious because the effects of the very different environments have not been well understood.

Of course, an obviousness concern needs to meet certain prima facie criteria. As the Office is well aware, “[T]he examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness.” MPEP 2142. The MPEP goes on to state that “To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” MPEP 2143, Basic Requirements of a *Prima Facie* Case of Obviousness. Applicant submits that these three criteria have not and cannot be met with respect to the cited references because the references do not show the combined features and do not show any suggestion or motivation to combine the features to achieve the effects now understood through the present invention. They do not teach or suggest all of the limitations, either alone or in combination, as MPEP 2143 requires. There is also no suggestion or motivation to modify the references or to combine the reference teachings. Neither the Magnan reference nor the Guidoboni reference suggest that the aircraft situation might pose an unusual condition in which camshaft lubrication can be impeded during normal operation. Neither reference suggests a use to address and rectify the conditions of unusual orientation encountered. There is just no motivation indicated from either reference or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine the reference teachings so as to arrive at the inventive technology defined by the claims of the present invention. Indeed, for years this problem has existed and yet no one has fully appreciated it and no one has seen the possibility of solutions as presented in this invention. Accordingly, it is respectfully requested that the concerns be reconsidered and that all claims involving such a feature be explicitly allowed.

As to claim 37, this claim addresses, *inter alia*, a significant pressure gradient in the interior of a camshaft. There appears to be no teaching in the Magnan nor Tokuyama references

relative to this aspect. Magnan fails to disclose a significant pressure gradient, as the action states. Tokuyama also fails to disclose a significant pressure gradient. Tokuyama teaches a pressure regulating means, such as orifices, to regulate pressure of the oil. Accordingly, Tokuyama teaches an orifice, not a significant pressure gradient of claim 37. Of course, this means that the Magnan and Tokuyama reference do not meet the requirements under section 103. Specifically, they do not teach or suggest all of the limitations, either alone or in combination, as MPEP 2143 requires. In this instance, it seems clear that the Magnan and Tokuyama references do not disclose the differential aspects listed in the cited claims. Thus, it is respectfully requested that the concern be reconsidered and that all claims involving such a feature be explicitly allowed.

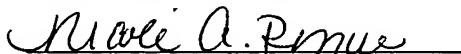
Because the additional prior art cited by the Examiner has been included merely to show the state of the prior art and has not been utilized to reject the claims, no further comments concerning these documents are considered necessary at this time.

CONCLUSION

The applicant having addressed each of the action's concerns, respectfully requests reconsideration and withdrawal of the rejections and objections to the application. Allowance of claims 1, 5, 6, 8-15 and 26-37 is requested at the examiner's earliest convenience. Further, either should the Examiner have any remaining questions or even once the claims are allowed, the Applicant requests that the Examiner contact the undersigned by telephone in order permit a further assessment of the claims previously allowed but not currently pursued in this application.

Dated this 5th day of November, 2004.

Respectfully submitted,



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AMENDMENTS TO THE DRAWINGS:

The attached six (6) sheets of drawings include changes to each drawing sheet. Amendments to the description of the specification corresponding to the amendments to the drawings are also accomplished.

Attachment: Replacement Sheets 1-6



Attorney Docket: FWF-Camshaft-USCont
Express Mail No: EV 508576248 US

IN THE UNITED STATES PATENT AND
TRADEMARK OFFICE

In Re the Application of: Mark E. Seader, Thomas E. Ehresman

Serial Number: 10/686,393

Filed: October 14, 2003

For: Lubricated Camshaft

Assignee: Firewall Forward Technologies, LLC

APPENDIX
REPLACEMENT DRAWINGS SIX (6) SHEETS